ABSTRACT

A method and apparatus for low-background detection of simultaneously-emitted characteristic radiative emissions is presented. In some aspects, the characteristic radiative emissions, e.g. X-rays, are produced by deexcitation of exotic (excited) atoms in a sample to be identified. The characteristic X-rays can be used to identify the sample according to its unique identifying energy spectrum. In other aspects, a nuclear characteristic radiative emission is detected and used for the identification.